

REMARKS

The above amendments and following remarks are responsive to the points raised in the November 8, 2005 final Office Action. Upon entry of the above amendments, Claims 1 and 11 will have been amended, Claims 9, 10, and 13 will have been canceled, and Claims 1-8, 11, 12, and 14 will be pending. No new matter has been introduced. No issues have been raised that require further consideration or search. Entry and reconsideration are respectfully requested.

Response to the Rejections under 35 U.S.C. § 103(a)

Claims 1-5, 11, 12, and 14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent 6,559,465 to Yamada et al. (Yamada) in view of US Patent 5,309,197 to Mori et al. (Mori). Claim 1-5 and 7-14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent 6,813,000 to Nishi in view of US Patent 6,281,966 to Kenmoku. Claim 6 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nishi in view of Kenmoku and further in view of US Patent 6,549,271 to Yasuda et al. (Yasuda). Applicant traverses these rejections.

Applicant respectfully submits that subject matter recited in the claims is neither taught, suggested, nor otherwise rendered obvious over the applied prior art references of Yamada, Mori, Nishi, Kenmoku, and/or Yasuda, either alone or in combination.

The feature of the present invention according to Claim 1 directed to the exposure method is that “a measuring step of measuring a tilt of an image plane of the projection optical system in a direction in which the reticle and the substrate are scanned”.

By measuring the tilt of an image plane of the projection optical system, it becomes possible, for example, to adjust the tilt of the image plane of the projection optical system to the tilt of the wafer surface, so that it becomes possible to precisely expose a wafer with a pattern. On the other hand, Yamada, Nishi, Kenmoku, and Mori don't disclose nor suggest the measuring of the tilt of the image plane of the projection optical system.

Therefore, Applicant believes that the exposure method described in Claim 1 having “a measuring step of measuring a tilt of an image plane of the projection optical system in a direction in which the reticle and the substrate are scanned” is neither taught, suggested, or otherwise rendered obvious from such cited references, either alone or in combination.

The Examiner indicated that Yamada discloses a measuring mechanism (10-19) for measuring a position of an image plane of the projection optical system. However, the measuring mechanism (10-19) measures the position of the wafer surface and cannot measure the image plane of the projection optical system.

Further, the Examiner also indicated that Mori discloses a detecting system (11-18) for measuring a position of an image plane of the projection optical system by detecting the light through a projection optical system. However, the detection system (11-18) detects the light having transmitted through the projection optical system and the position of the mark of wafer 5 or the reference mark 10 within a plane perpendicular to the optical axis, and don't detect the position of the image plane of the projection optical system.

Therefore, since Yamada and Mori don't disclose the measuring the position of the image plane of the projection optical system, Applicant believes that the present invention according to claim 1 having “a measuring step of measuring a tilt of an image plane of the projection optical system in a direction in which the reticle and the substrate are scanned” is neither taught, suggested, or otherwise rendered obvious from Yamada and Mori, either alone or in combination.

Furthermore, the Examiner indicated that Nishi discloses a measuring system 44 for measuring a position of an image plane of the projection optical system. However, the measuring system 44 measures the position of the wafer surface and cannot measure the image plane of the projection optical system. And as indicated by the Examiner, Kenmoku discloses a detection system for detecting the position of the image plane of the projection optical system by detecting the light through the projection optical system. However, Applicant believes that it is not easy to combine the measuring system

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disclosed in Nishi which measures the position of the wafer surface and the detection system disclosed in Kenmoku which detects the position of the image plane of the projection optical system by detecting the light transmitted through the projection optical system, because the objects to be measured thereof are completely different from each other.

Consequently, Applicant believes that the present invention according to Claim 1 having “a measuring step of measuring a tilt of an image plane of the projection optical system in a direction in which the reticle and the substrate are scanned” is neither taught, suggested, nor otherwise rendered obvious from Nishi and Kenmoku, either alone or in combination.

In view of the above, Applicants respectfully submit that the subject matter of Claims 1 and 11, as well as Claims 2-8, 12, and 14, are distinguished over the cited and applied references of Yamada, Mori, Nishi, Kenmoku, and/or Yasuda, either alone or in combination.

Accordingly, the rejections under 35 U.S.C. 103(a) should be withdrawn.

CONCLUSION

Applicants respectfully submit that Claims 1-8, 11, 12, and 14 are in condition for allowance and a notice to that effect is earnestly solicited.

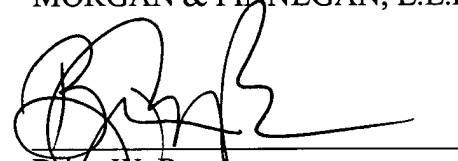
AUTHORIZATIONS

The Commissioner is hereby authorized to charge any additional fees which may be required for the timely consideration of this amendment, or credit any overpayment to Deposit Account No. 13-4500, Order No. 1232-5324.

Respectfully submitted,
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